The Battle of Poetry against Itself: On Jim Andrews's Digital Poetry

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"Codework" is a generic term used to describe works of electronic literature that make expressive use of computer code or pseudo-code. This term is particularly apt to describe the creations of those artists who are also the programmers of their own work, exploring the potential of programming languages at the level of code. Jim Andrews is one of those artists. Several of his works are aesthetic and mathematical investigations of the materiality of digital textuality as both a representation and a performance of reading. His texts generally integrate computer game functions and structures, such as iterations at increasing levels of complexity or difficulty. Readers are required to interact with the textual field by means of buttons that execute a number of operations upon sets of objects and of events.[1]

Two formal features distinguish his works. On the one hand, they show a minimalist and a serialist approach to poetic form: each work is composed by a relatively small number of constituent elements which are then subject to a large number of permutations. The generative properties of natural language are thus mirrored in the generative properties of computer language. Digital textuality is investigated as an extension of the material space of phonological and grammatological difference, i.e., as writing and reading space. On the other hand, most of his works combine deterministic with randomized patterns: they have several pre-programmed sequences of events, each of which has to be activated by the reader/player,

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[1] Several articles and books have looked at the particularities of animation in digital poetry, but the scripting, simulation and modelling of reading through textual motion has received little attention. See, for instance, Ikonen 2003, Lee 2002, Simanowsky 2002, Wardrip-Fruin 2005, and Funkhouser 2008.

but the actual patterns displayed on the screen are always a random instantiation of a large number of potential occurrences. Minimalism, serialism, determinism, and randomness are connected by readers' interventions in those sign fields.

This programmed interaction is often used to make the reader perform the meaning of the text. As happens in many visual and concrete texts, the operation of reading the text becomes part of the referential meaning of the text. By creating a feedback loop between interpretation and material form, such works direct the reader's attention to the perceptual and conceptual processing of the signifiers themselves. Reading is materialized on the surface of the text because the text makes the reader perform what it says. As textual reference points to the action of constructing meaning, the very act of reading stands out as the major signifier in the work's field of signs. Readers see themselves performing the act of reading and that particular performance becomes the meaning of the text. Their semiotic intervention at the textual level is also a simulation of the interpretative re-production of the textual field. Meaning can only be re-produced as the effect of a specific reading motion or act. Programmed interaction in Jim Andrews's computer poems enacts the drama of reading as a turbulent field of motions from sign to sign, and from sign to self.

Enigma n (1998, 2004, http://www.vispo.com/animisms/enigman/ meaning.html) and *Arteroids* (2001-2006, http://vispo.com/arteroids/ onarteroids.htm) are two works in which we can see the performance of reading being enacted by the text. As in other works by Jim Andrews, reader's interventions co-determine certain aspects of the display, including readability, sequentiality, and spatiality of textual fragments. Andrews is particularly interested in exploring the programming features of digital media in order to make the playfulness of art and poetry into a formal element of the works themselves. He uses certain conventions and tools of computer games as rhetorical devices in his digital multimedia works. Digital textuality allows him to edit sound, image, motion, and writing in both patterned and randomized permutations. Reading thus becomes a self-conscious play with the ensemble of material and formal elements of a given work. Interactivity is programmed in ways that enhance self-consciousness of reading acts as part of the signifying field. The reader becomes entangled in the sign field that s/he is trying to process.
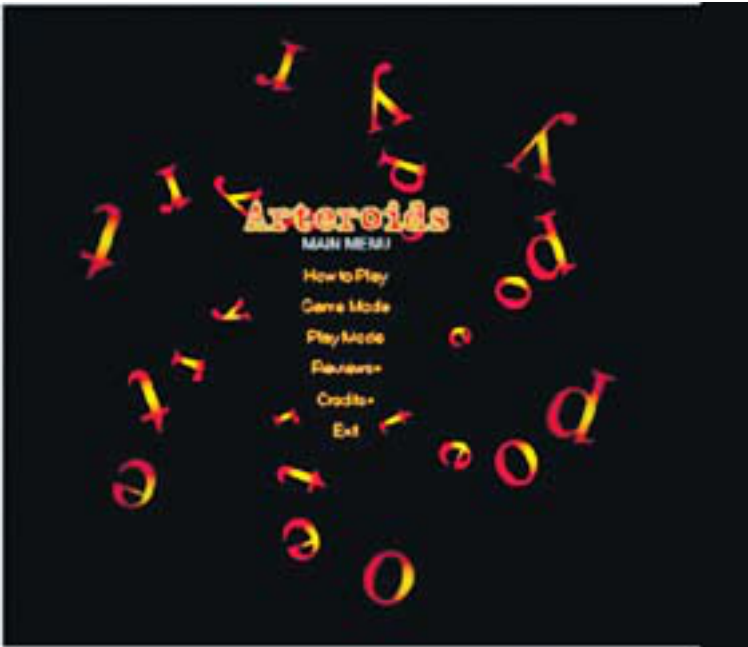
Figure 1. Jim Andrews, *arteroids* (version 3.11, 2006): main menu [screen capture].

Arteroids, a "visualkineticaudio text", is a formal parody of *Asteroids*, an early computer videogame, originally designed for the Atari computer in 1979.[2] Like software applications and computer games, *Arteroids* now exists in three major versions, developed over a period of five years: version

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[2] From the *Wikipedia* entry: "*Asteroids* is a video arcade game released in 1979 by Atari Inc. It was one of the most popular and influential games of the Golden Age of Arcade Games. *Asteroids* uses vector graphics and a two-dimensional view that wraps around in both screen axes. The player controls a spaceship in an asteroid field which is periodically traversed by flying saucers. The object of the game is to shoot and destroy asteroids and saucers while not colliding with either, or being hit by the saucers' counter-fire." http://en.wikipedia.org/wiki/Asteroids_(video_game) (accessed 12 Nov 2009).

1.0 (2001-2002), version 2.0 (2003-2004), and version 3.0 (2005-2006).[3] Changes and additions to the original code have extended its interactive capabilities. One of the functionalities imagined by Andrews (but still unrealized in the work's latest version, 3.11) is the possibility of saving and e-mailing textual sequences generated by readers. Andrews has described this work as "a literary computer game for the web" (version 1.0, 2001) and "a literary shoot-em-up computer game — the battle of poetry against itself and the forces of dullness" (version 2.5, 2003).

The poem is structured in two modes: the "game mode" and the "play mode". In the game mode the player-reader has no control over the four parameters (velocity, density, friction, and mortality) that define the behaviour of his/her entity. In play-mode, those four parameters as well as the textual fragments that the player-reader has to shoot at may be adjusted according to predefined controls. The number of permutations is also different: in the game mode, the game-poem has 216 combinations (levels), while in the play mode it has 3360 levels [12*20*14=3360]. The role of the original shooting spaceship is played by the word "desire" in play mode (as well as by other words introduced by the player) and by the word "poetry" in game mode.[4] Textual asteroids are organized into four sets of lines (inner green, outer green, inner blue, outer blue). Players can define both textual asteroids and shooting word by overwriting the default elements.

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[3] The first version is divided into two cantos: 'Canto 1: Streaming (Texts)' and 'Canto 2: Writing (Arteroids)' [controls: Space Key-bomb mot; S-forward, A-backward, K-left, L-right]. Later this binary structure is redefined as 'play mode' and 'game mode', a distinction that Andrews elaborates in terms of the difference between art and game.

[4] This distinction also comes from computer games: in the *play mode* players can configure the spatial architecture, characters etc, customising certain display features of the graphical interface, while in the *game mode* they use the predefined controls to interact with the programmed objects, trying to get to the end of each stage and move on to the next level.

FIGURE 2. Jim Andrews, *arteroids* (version 3.11, 2006): game mode versus play mode [screen capture].

Andrews uses the semiotics of the computer game as a way of probing into the dynamics of language and signification in general. He describes *Arteroids* in this way: "*Arteroids* is about cracking language open". This description captures the dynamics of his work as both a self-reflective engagement with the digital materiality and an exploration of the combinatorial properties of verbal language. Digital code makes it possible for all sorts of objects to be treated as "material objects of information that have editable properties" (not just alphabetic writing, but sound, image, motion, and any other spatial or temporal material component). The editability of digital entities is foregrounded in the lettristic explosions of words and phrases into visual constellations that are accompanied by sound

explosions.[5] Language is decomposed into its graphemic and phonemic elements. As minimal constituent elements of a signifying process that translates their system of material differences into a syntactic and semantic layer, they also resemble the operations that translate computer code into readable and interpretable forms.

Shootings and collisions point to the dynamics of creation and destruction of meaning as a function of semiosis, that is, the process of substituting signs for other signs. While this dynamics is inherent in the way language works, we are often unaware of such inner workings as the formal and material source for the possibility of meaning, and thus for the creation and redefinition of the human. Naturalization of certain discursive structures prevents us from being aware of the extraordinary fluidity and power of language as an infinitely renewable source for the transformation of meaning. In its disarming simplicity, *Arteroids* offers us a digital simulation of those deep furnaces of language.

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[5] Jim Andrews on the editing and organization of sound in *arteroids 3.11:* "The sounds of exploding arteroidal texts are male, female, young and old, human and semi-human, semi-human and animal. Every sound in Arteroids is my voice and nothing but — with a little help from Sound Forge. The sounds range from cartoonish to adult, sound poetry to computer game, Kurt Schwitters to Mel Blanc and Gregory Whitehead in their associations.

When the player executes a text, one of 21 sounds is selected. A random pitch-change is then made to the sound anywhere between ten semitones above the original pitch and 20 semitones below the original pitch. It is the pitch-change that gives Arteroids its sonic range into the animal and semi-human, the female, and the child, primarily. Pitch-change also provides greater variety with 21 petit death sounds, so that the sound is suitably rich in variety.

As you can hear in the MP3's linked to the Arteroids home page, sound recordings I made of games I played, the audio, when the game is played well, is listenable in its own right as a kind of sound poetry punctuated into different 'verses' between the explosion of poetry.

Part of the idea of the audio is to create a high energy sound track for a game, and make it ultra human, or hyperhuman, as the case may be. Really alive, in any case, and lively." http://vispo.com/arteroids/onarteroids.htm (20 Feb 2010).
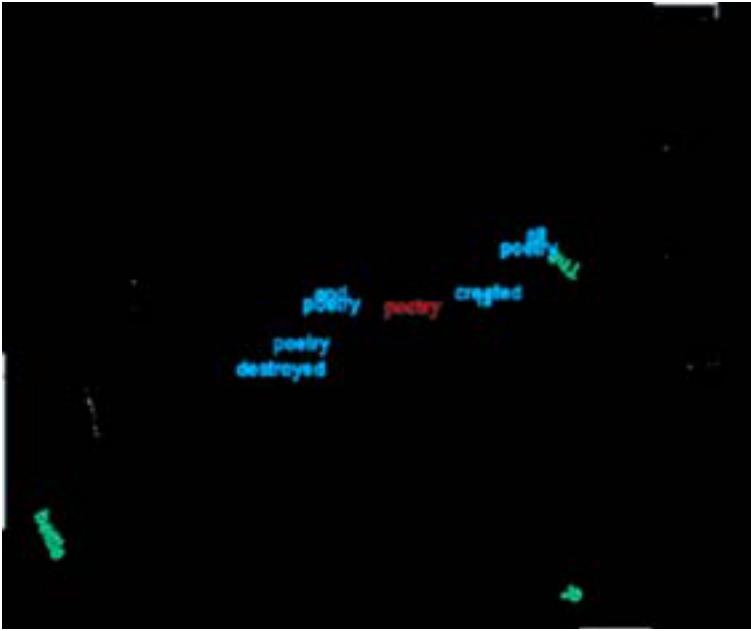
FIGURE 3. Jim Andrews, *arteroids* (version 3.11, 2006): game mode [screen capture].

The battle of poetry against itself is a suggestive image of our linguistic predicament as symbolic creatures who have to constantly struggle and fight with language in order to produce ourselves as subjects. By making words shoot at words on the computer monitor, Andrews has turned certain features of digital textuality into literary and artistic tropes. The reader is required to perform retroactivity as part of the work's content and not just as a tool for achieving a set of goals or for producing a series of effects. The tension between the immersive and the interactive is formally enacted at each level of the game by the tension between readability and the fragmentation of textual elements into its sound and graphic particles.

The player experiences the correlation between the inner motions of language in its formal workings and the outer motions of reading as yet another layer in the constitution of the textual field. While the player can abandon him/herself to the pleasures of the game, s/he can also become

aware of playfulness itself as the source for new forms and new perceptions. The text becomes a series of quantum states that respond to the reader's interventions in its dynamic field. In Andrews's programmed poems reader's interventions take place not just at the level of interpretation. Readers become co-producers of the text's semiotic texture whose particular formal and material instantiation is not entirely constituted before readers intervene. Meaning is a function of the potentiality of semiotic structures in their response to actual haptic actions by the reader-player. Random fluctuations allow for the emergence of new kinaesthetic patterns.
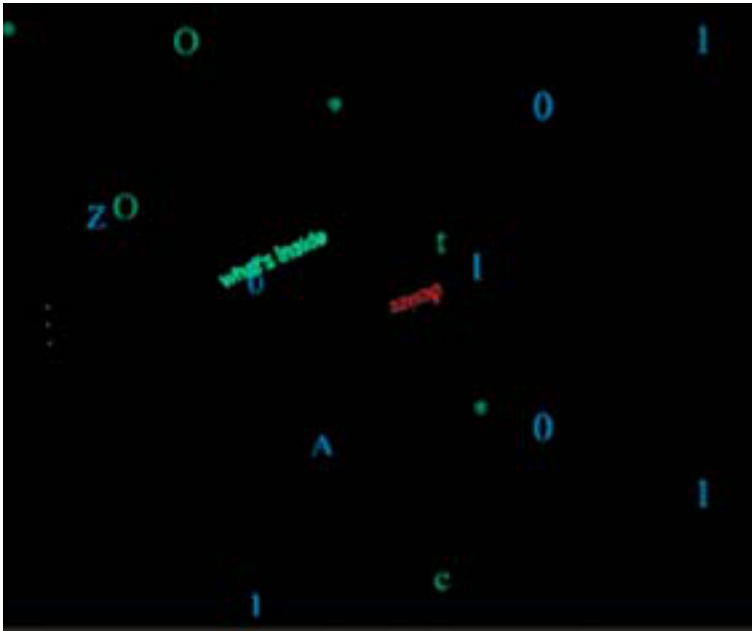

Figure 4. Jim Andrews, *arteroids* (version 3.11, 2006): play mode [screen capture].

Another work by Andrews, *Enigma n* (1998), is a magnificent simulation of the autopoietic features of the textual field. Instability of meaning arising from the textual instability of signifiers is the specific theme of *Enigma n*. In this poem, readers can perform eight different iterations on seven letters

("Prod", "Stir", "Tame", "Spell", "0/1", "Colour", "Discombobulate", and "Speed"). The letters (which are the same of the poem title, *Enigma n*) move according to different trajectories and they can be stopped at any time, forming multiple and unpredictable patterns. When stopped they sometimes form the word "meaning", in various configurations, or just a constellation of its letters. The order of interactions of the letters can vary, changing both the sequence of kinetic events and the sequence of display screens resulting from the readers' interventions. Variations affect several textual properties, including speed, trajectory, size, colour, and 3d effects. The sequence of those changes can, in turn, be recombined in multiple ways, raising the number of occurrences of textual patterns.

This work may be seen as a cybertext, in Espen Aarseth's definition (1997). To the extent that this text is also textual engine, i.e., an algorithm for generating semi-determined textual objects, the outcome partly depends on a non-trivial textual intervention by the reader. This type of textual action combines a hermeneutical (interpretive) and a semiotic dimension (sign manipulation). In effect, the act of reading is the very process of engaging in the textual game as much as it is any particular textual state produced by that game. What does it mean to read a work like this? It means that the reader, interacting with a pre-programmed field of textual possibilities, generates part of the textual forms that he/she sees and reads. The reader actualizes a certain number of potential configurations. The play of signifiers in the process of differentiation that generates meaning takes place at both material and interpretational levels, suggesting the correlative materiality of semantic and graphical form. In programmed works, the representation or display of writing is dependent on the lines of code that determine movement and textual changes. It is also dependent on the operations of reading as semiotic recoding rather than just hermeneutical decoding.

Enigma n is not fully produced without the reader's intervention in its field of signifiers. This text asks readers to produce certain instances of itself. By using the text's commands readers generate a number of unique textual occurrences. Although these are ultimately performed by the underlying code, readers' interventions randomly select certain textual constellations. And it is these constellations that constitute their text, a specific enactment of many potential formal instantiations. The code is

FIGURE 5. Jim Andrews, *Enigma n* (1998): 'Enigma n start'. [screen capture].
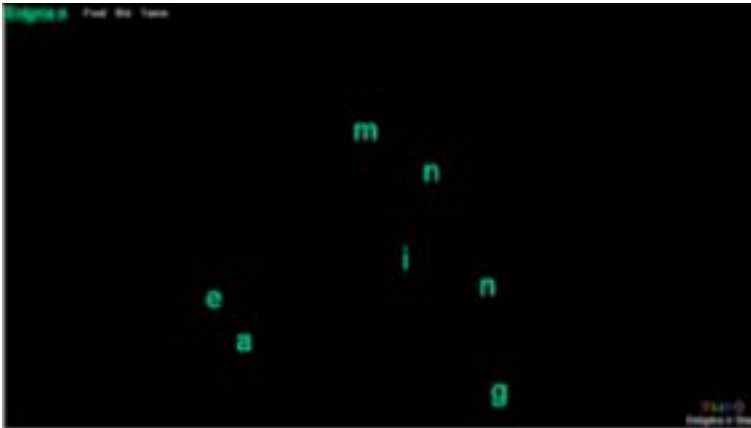

FIGURE 6. Jim Andrews, *Enigma n* (1998): 'stir' [screen capture].

generating the text for the reader but, at the same time, the reader is asked to generate certain textual occurrences by intervening in the stop/motion procedure. The textual forms of *Enigma n* remain partially undetermined before readers' interventions. Once an intervention has occurred, the text reveals its dynamical co-dependence on a particular intervention. The source code [of which a sample is given below, see "Appendix", pp. 91-103] is the meta-text that generates the display text which is further subject

FIGURE 7. Jim Andrews, *Enigma n* (1998): 'discombobulate' [screen capture].

to readers' textual interventions to realize the potential textual semiotic coding contained in its meta-textual possibilities.

Jim Andrews's animated ideogram wants the reader to perform the enigma of meaning. Twentieth-century linguistics and philosophy of language have unveiled some of the properties that make it possible for language to mean. Saussure has described language as a system of differences. Signifiers cut-out conceptual and referential space as a function of their phonological differences. Relations between signifier and signified, as well as relations between signifier and referent, are stabilized by the way social conventions and discourse formations enact the language contract. However such relations remain open to the turbulent generative processes that constitute language at the phonological, syntactic, and semantic levels, and which allow for the continuing formation and transformation of self and society within language. Even if we subscribe to certain universal evolutionary properties of language structures and thought processes, such as mental categories and language structures, the possibilities for recombination and proliferation of meaning seem endless. Culture and ideology, for example, operate by stabilizing certain modes of reference and meaning, and by naturalizing certain kinds of privileged associations. For poststructuralism, this instability of connections between signs and meaning is seen as inherent to signification, since meaning stems from the very motion in the chain of signifiers. The ability to reassociate and resignify is at the core

of the way human beings use the engine of language which constantly converts literal into metaphorical, and vice versa.

Cinema, phonography, and typewriting separated optical, acoustic, and written data flows. According to Friedrich A. Kittler, the media ecology of the early twentieth century disrupted any straightforward association between signifier and signified as function of the "inner self", the "soul" or the "individual". These "were only the effects of an illusion, neutralized through the hallucination of reading and widespread literacy" (151) which were maintained by the particular literary and educational practices of the nineteenth century.[6] The standardized letters of the typewriter severed the connection between paper and body, and typewriting became part of the technologizing of information: "From the beginning, the letters and their arrangement were standardized in the shapes of type and keyboard, while media were engulfed by the noise of the real — the fuzziness of cinematic pictures, the hissing of tape recordings" (Kittler: 14). Jim Andrews's spiralling letters seem to externalize the symbolic grid of writing as a self-recursive stream of signs ready for human and machine processing. Their motion highlights the materiality and differentiality of linguistic and written signs, while the interface involves the human reader in the stochastic disorder of letters.

In the semiotic and hermeneutic exercise proposed by Jim Andrews, to make sense is both to stop and to restart the motion of letters. This dialectics produces "meaning", that is, the graphemic and phonological string we recognize as the word "meaning". But it can also result in various sequences and random combinations of the letters themselves — not just in the visual patterns they form but in their graphic materiality (size, colour, speed, trajectory, etc). Paradoxically, to produce "meaning" seems to be the very act of stopping the motion of meaning which is the defining

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[6] Meaning as a 'reading hallucination' depended on the particular performance required of print before the invention of optical and acoustic media: 'As long as the book was responsible for all serial data flows, words quivered with sensuality and memory. It was the passion of all reading to hallucinate meaning between lines and letters: the visible and audible world of Romantic poetics.' Friedrich A. Kittler, *Gramophone, Film, Typewriter*, Transl. Geoffrey Winthrop-Young and Michael Wutz, Stanford, CA: Stanford University Press, 1999, p.10.

characteristic of meaning. Making sense, as a frozen material instantiation of form on computer screen, is suggested as both a redundancy and a tautology: that is, it is played out as the coincidence of the word "meaning" with itself. On the other hand the animation frames where letters take their proper orthographic and orthophonic order are challenged by those frames where their random arrangement suggests endless possibilities in their chaotic and turbulent motions. Thus, this may be the answer the poem offers to its own enigma "n": meaning may be defined by its exponential proliferation to the potency n. It is always materially enacted through the motion of an unstoppable signifying textual production and reception process. This process, while it subjects us to its own pre-constituted relations of meaning production and consumption, also gives us the chance to step into the gap between signifier and signified, in order to find and produce other meanings. In other words: multiple meanings rather than any singular meaning.

Enigma n (1998, 2004), Arteroids (2001-2006) and other works by Jim Andrews have turned certain features of computer programs into new kinds of literary tropes. Poetry is enacted and embodied in his digital texts as the battle of language against itself, and the battle of self against its language. Retroactions between self and language are emulated as retroactions between reader and machine. The loop in the code becomes a self-referential device for playing out the game of meaning. Readers/players experience the co-dependence between a given field of signs and their own interventions in that field. As he/she responds to the programmed iterations, he/she also modifies the textual and visual patterns available for reading. From those unanticipated and semi-determined patterns meaning emerges. As an emergent phenomenon, meaning is produced by the differential relations within the work's syntactic and semantic structures, and by the retroaction between human subject and computer code through the computerized algorithms. The simulation of this process within the text instantiates what Hayles has described as the intermediating dynamics between human beings and machines (2008). As technotexts, they also make their readers experience the algorithmic character of digitality. Jim Andrews's interactive kinetic poems require readers to materially perform the patterns and motions of meaning. Readers become aware of the ensemble made by signs and the human-machine processing of those signs.

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